

REMARKS

Discussion of Amendments Herein

Claim 1 has been amended by further clarifying that the two layers are separate. New claims 16-19 have been added and are directed to embodiments of the present invention. No new matter has been added by way of this Amendment.

The Office Action

The Office Action sets forth the following grounds for rejection: (1) claims 1-7 are rejected under 35 U.S.C. § 102(e), as allegedly anticipated by U.S. Patent 5,858,616 (Tanaka et al.); and (2) claims 1-8 and 10-15 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Tanaka et al. in view of U.S. Patent 5,922,395 (Koike et al.).

Further, an error is noted in the Office Action Summary under the "Disposition of the Claims" section. The Applicants respectfully submit that claims 1-8 and 10-15 were pending in the application at the time the Office Action was mailed and not claims 10-15 and 18, as indicated.

The Present Invention

The present invention relates to a process for forming a pattern of fluorescent substance into the cell for producing a fluorescent substance display device such as a plasma display panel. Claims 1-8 and 10-19 are pending. A complete set of pending claims is attached.

Discussion of Anticipation Rejection

Claims 1-7 are rejected under 35 U.S.C. § 102(e), as allegedly anticipated by Tanaka et al. Applicant respectfully traverses this rejection.

Although Applicant disagrees, Applicant has amended claim 1 to expedite the prosecution of the present application. Tanaka et al. fails to disclose the presently claimed invention. The present invention recites providing inside the cell two separate layers which are (i) a resin composition (A) layer and (ii) a photosensitive resin composition (B) layer and the resin composition (A) layer is disposed between the inside of the cell and the photosensitive resin composition (B) layer. Further, as apparent from claim 1, the fluorescent substance is not contained in the photosensitive resin composition layer. In contrast, Tanaka et al. teaches a single layer. Tanaka et al. teaches depositing a layer comprising a resin

composition (A) and a photosensitive resin composition (B), and the fluorescent substance is contained in this layer. See, for example, column 2, lines 26-35. The phosphor (E) is present in the photosensitive resin composition. See, also column 14, lines 13-16 ("The process for preparing a fluorescent pattern of the present invention comprises coating the photosensitive resin composition of the present invention on a substrate for a plasma display panel and carrying out drying, exposure in a pattern state, development and then calcinations"). Claims 2-7 are directly or ultimately dependent upon claim 1. Tanaka et al. fails to disclose each and every element of the claimed invention.

In view of the foregoing, the anticipation rejection of claims 1-7 is improper and should be withdrawn. Claims 1-7 are also not obvious since, for example, there is an advantage resulting from the use of two separate layers in the present invention. It is possible to form the pattern of fluorescent substance uniformly to effectively emit the fluorescent substance filled in the cell and not to form pattern defects on the side and bottom wall of the cell during baking. Moreover, the amount of fluorescent substance can be decreased due to the realization of forming such pattern of fluorescent substance, see, e.g., page 3, lines 6-12 of the present specification.

Claims 16-19 also should not be rejected on this basis. Tanaka et al. fails to disclose a process involving the above two layers. Furthermore, Tanaka et al. fails to provide a third layer between the two layers as in claim 16, to provide the layers in contact with each other as in claim 17, or laminating and placing the layers placing inside the cell as in claim 18. Tanaka et al. also fails to disclose the recited order of placing the two layers.

Discussion of Obviousness Rejection

Claims 1-8 and 10-15 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Tanaka et al. in view of Koike et al. Applicant respectfully traverses this rejection.

As discussed, Tanaka et al. fails to disclose the presently claimed invention which recites providing inside the cell two separate layers which are (i) a resin composition (A) layer and (ii) a photosensitive resin composition (B) layer and the resin composition (A) layer is disposed between the inside of the cell and the photosensitive resin composition (B) layer of claim 1 or wherein the photosensitive resin composition (B) layer is formed in the cell after the resin composition (A) layer is formed of claim 8. Further, Tanaka et al. fails to

disclose the presently claimed invention wherein the fluorescent substance is not contained in the photosensitive resin composition layer.

Koike et al. teaches away from the invention recited in claims 1-8 and 10-15. In Koike et al., the fluorescent substance containing layer is formed above the photosensitive resin composition layer, while in the present invention, in contrast, the resin composition (A) layer is disposed between the inside of the cell and the photosensitive resin composition (B) layer.

The Office Action contends that in Figure 4 of Koike et al., layer 7B is a phosphor or fluorescent layer. Applicant disagrees. As disclosed in Koike et al., layer 7B is a pigment layer and not a phosphor or fluorescent layer, see, e.g., column 8, lines 49-59 and column 9, lines 17-18. A pigment layer should not be confused with a phosphor layer. As shown in Koike et al., a pigment layer 7B is formed on a face plate 1. See FIG. 4B and column 9, lines 13-18. As shown in FIGS. 4B and 4D, a photoresist layer 8 is disposed on the pigment layer 7B. See also column 9, lines 25-26. And as shown in FIGS. 4E and 4F, after the photoresist layer 8 is peeled off, a silica layer 5 is disposed on the pigment layer 7B, and a phosphor layer 6B is then formed on the pigment layer 5. See also column 9, lines 43-56. As discussed in Koike et al., the phosphor formed is 6B, 6G, or 6R, above all other layers that are formed, see, e.g., column 9, lines 43-56. Therefore, not only does Koike et al. not disclose the claimed invention, but in Figure 4, the photosensitive resin layer 8 is disclosed as being removed entirely before the phosphor is formed. There is no prima facie obviousness.

The combination of Tanaka et al. and Koike et al. fails to suggest to those of ordinary skill in the art the presently claimed invention. Tanaka et al. discloses a single layer and Koike et al. discloses layers in a reverse order; thus, their combination does not suggest the present invention.

Further, according to the present invention, it is possible to form the pattern of fluorescent substance uniformly to effectively emit the fluorescent substance filled in the cell and not to form pattern defects on the side and bottom wall of the cell during baking by forming the fluorescent substance-containing layer under the photosensitive resin composition layer. Moreover, the amount of fluorescent substance can be decreased due to the realization of forming such pattern of fluorescent substance. But this effect cannot be realized by the method of Koike et al. See, e.g., page 2, lines 20-26 and page 3, lines 6-12 of the present specification.

In re Appln. of Hiroaki Satoh
Application No. 09/271,447

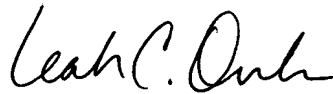
In view of the foregoing, the obviousness rejection of claims 1-8 and 10-15 should be withdrawn and claims 16-19 also should not be rejected on this basis.

Conclusion

The application is considered in good and proper form for allowance. As this Amendment is accompanied by a CPA, Applicant respectfully requests entry of the Amendment. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1762

PATENT
Attorney Docket No. 400113/ASAHINA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

HIROAKI SATOH

Application No. 09/271,447

Filed: March 18, 1999

Art Unit: 1762

Examiner: M. Cleveland

For: PROCESS FOR FORMING A
PATTERN OF FLUORESCENT
SUBSTRATE AND PLASMA
DISPLAY PANEL

AMENDMENTS TO CLAIMS MADE IN RESPONSE
TO OFFICE ACTION DATED NOVEMBER 27, 2001

RECEIVED
MAR 01 2002
TC 1700

Amendments to existing claim:

1. (Amended) A process for forming a pattern of fluorescent substance into the cell of a fluorescent substance display substrate, comprising providing inside the cell two separate layers which are (i) a resin composition (A) layer and (ii) a photosensitive resin composition (B) layer, exposing the layers to light, developing the exposed layers, and baking the developed layers; wherein ~~a~~ the resin composition (A) layer, comprising comprises an acrylic polymer (a) having a weight average molecular weight of 10000 to 300000 and an acid number of 80 to 250 mgKOH/g and a fluorescent substance (b), and the resin composition (A) layer is disposed between the inside of the cell and the ~~and a~~ photosensitive resin composition (B) layer ~~are formed inside the cell, and then they are exposed, developed and baked.~~